



Docket No.: 9988.075.00
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
DO, Gi Hyeong

Customer No.: 30827

Application No.: 10/716,444

Confirmation No.: 6634

Filed: November 20, 2003

Art Unit: 3749

For: LAUNDRY DRYER AND CONTROL
METHOD THEREOF

Examiner: Stephen M. Gravini

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANT'S AMENDED BRIEF

Sir:

In response to Notification of Non-Compliant Appeal Brief and a Final Rejection mailed on June 8, 2007, Appellant hereby submits this amended Appeal Brief.

The fees required under § 1.17(f) and any required petition for extension of time for filing this brief and fees therefore are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37(c):

- I. Real Party In Interest
- II. Related Appeals and Interferences
- III. Status of Claims
- IV. Status of Amendments
- V. Summary of Claimed Subject Matter
- VI. Grounds of Rejection to be Reviewed on Appeal

VII. Argument

VIII. Conclusion

Claims Appendix

Evidence Appendix

Related Proceeding Appendix

I. REAL PARTY INTEREST

The real party in interest for this appeal is: LG Electronics Inc.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Total Number of Claims in the Application.

There are 12 claims pending in this application.

Current Status of Claims:

Claims canceled: 5 and 13-14.

Claims withdrawn from consideration but not canceled: 15.

Claims pending: 1-4, 6-12 and 15.

Claims allowable: None.

Claims rejected: 1-4 and 6-12.

Claims on Appeal: 1-4, 6-12 and 15.

IV. STATUS OF AMENDMENTS

The Examiner issued a Final Rejection on June 8, 2007. In that Rejection the Examiner required a restriction on Group I, corresponding to claims 1-4 and 6-8, drawn to an apparatus, and Group II, corresponding to claims 9-12, drawn to a method. Further, the Examiner constructively restricted and withdrew newly added claim 15 as being directed to an invention that was not originally presented for prosecution on the merits. The Examiner then rejected claims 1-4 and 6-12. A Notice of Appeal was then filed on October 9, 2007. In this appeal all the claims 1-4, 6-12 and 15 are being appealed. The pending claims are as in the Amendment filed February 16, 2007, which are reflected in the Claims Appendix.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The claimed invention is directed to a laundry dryer in which a temperature sensor is employed to enable a dynamic adjustment of cooling time after completion of a drying procedure. *Specification at paragraph [0002].*

As shown in Fig 3, by way of example, the claimed laundry dryer includes a temperature sensor 240 for sensing an internal temperature of the laundry dryer and outputting a sensed temperature signal indicative of the internal temperature (Fig. 3, paragraph [0023]); and a microcomputer 250 for controlling a plurality of drivers associated with a heater, motor and exhaust fan according to the sensed temperature signal from said temperature sensor (Fig. 3, paragraph [0025]), wherein said microcomputer stops the heater and the motor, thereby initiating a cooling procedure, and the exhaust fan driver operates during the cooling procedure, such that the exhaust fan draws air out of a drum in the dryer (Fig. 3, paragraphs [0022], [0023] and [0025]).

In another aspect of the claimed invention, as shown in Fig. 4, a method of controlling a laundry dryer includes performing a drying procedure S10, wherein a motor, a heater and an exhaust fan are driven during the drying procedure (Fig. 4, paragraph [0024]); performing a cooling procedure S30, wherein the motor and heater are stopped during the cooling procedure (Fig. 4, paragraph [0025]); driving the exhaust fan to draw air from a drum in the dryer during the cooling procedure S30 (Fig. 4, paragraphs [0023] and [0025]); sensing an internal temperature of the laundry dryer during said cooling procedure step S40 (Fig. 4, paragraph [0025]); comparing the sensed internal temperature with a predetermined temperature value S40 (Fig. 4, paragraph [0025]); and stopping the cooling procedure step S50 if the sensed temperature is lower than a predetermined temperature Fig. 4, paragraph [0025]).

In yet another aspect of the claimed invention, as shown in Figs. 1 and 3, a laundry dryer comprises a drum 30 (Fig. 1, paragraph [0004]), a heater 20 for heating air introduced into the drum (Fig. 1, paragraph [0005]), a motor 50 for rotating the drum (Fig. 1, paragraph [0004]), an exhaust fan 40 for drawing air out of the drum (Fig. 1, paragraph [0004]), a temperature sensor 240 for sensing an internal temperature of the drum during a drying procedure and a cooling procedure, wherein the sensor outputs a sensed temperature signal indicative of the internal temperature of the drum during the drying procedure and the cooling procedure (Fig. 3, paragraph [0022]), a microcomputer 250 receives the sensed temperature signal indicative of the internal temperature of the drum and actuates a plurality of drivers associated with the heater, the motor and the exhaust fan according to the sensed temperature signal during the drying procedure, following the drying procedure, the cooling procedure begins, wherein the actuation of the exhaust fan continues throughout the entire cooling procedure, the actuation of the heater

and the motor is discontinued throughout the entire cooling procedure (Fig. 3, paragraphs [0023], [0024] and [0025]).

VI. GROUND S OF REJECTION TO BE REVIEWED ON APPEAL

- A. Are claims 1-4, 6-12 and 15 properly restricted under 35 U.S.C. §121?
- B. Are claims 1-4, 6-9 and 11-12 properly rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,245,764 to Sung (hereinafter "*Sung*")?
- C. Is claim 10 properly rejected under 35 U.S.C. §103(a) as being obvious over *Sung*?
- D. Are claims 1-4 and 6-12 properly rejected under the judicially created doctrine of obviousness-type double patenting over claims 1-15 of U.S. Patent No. 6,983,552 in view of claims 1-11 of U.S. Patent No. 6,775,923?
- E. Is claim 15 patentable over *Sung*?

VII. ARGUMENT

A. The Examiner improperly restricted claims 1-4 and 6-8, claims 9-12, and claim 15 under 35 U.S.C. § 121.

The Examiner alleges that a restriction is required under 35 U.S.C. § 121 to one of the following identified inventions:

Group I, corresponding to claims 1-4 and 6-8, drawn to an apparatus combination classified in class 34, 595;

Group II, corresponding to claims 9-12, drawn to a method, classified in class 34, 495;
and

Group III, corresponding to claim 15, drawn to an apparatus subcombination, classified in class 34, 606.

Moreover, the Examiner alleges that “since the applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 15 is withdrawn from consideration as being directed to a non-elected invention.” *See page 4 of the final Office Action.* This Restriction Requirement and the subsequent Election by Original Presentation are improper and should be reversed.

The Examiner alleges that Group I and Group II are distinct from each other because “the process as claimed can be practiced by another and materially different apparatus or by hand because the newly amended independently claimed process step of performing a drying procedure, wherein a motor, a heater and an exhaust fan are driven during the drying procedure are not limitations in any of the independently claimed apparatus groups.” *See page 2 of the Office Action.*

If a restriction is required, 37 C.F.R. §1.142 requires that the Applicant elect one of the groups indicated by the Examiner prior to examination on the merits. However, in this case, the Examiner fails to allow the Applicant to make any election prior to examination. Rather, the Examiner examines both Group I and Group II on the merits. Furthermore, the Examiner has failed to show that the apparatus of Group I is patentably distinct from the process of Group II. More specifically, the burden is on the Examiner to provide reasonable examples that recite material differences between the apparatus and process. *See MPEP 806.05(e)*. Merely stating that the process of Group II can be practiced by another apparatus because limitations found in the process claims of Group II are not “limitations in any of the independently claimed apparatus groups,” is not a reasonable example of a material difference. In order for the Examiner to conclude that Group I and Group II are patently distinct, the Examiner is required to provide an example of another apparatus or method that shows that Group I and Group II are patentably distinct. The Examiner has failed to provide such evidence. Moreover, since the Examiner has examined both groups on the merits, restriction is clearly not necessitated due to the burden on the Examiner. Therefore, the Restriction Requirement with regard to Groups I and II is improper and should be reversed.

In addition, the Examiner alleges that Group I and Group III are related as a combination and subcombination citing that “the combination as claimed does not require the particulars of the subcombination as claimed because the group I combination is not limited by the particular independent group III claim step of sensing an internal temperature of a drying *and cooling* procedure and indicative of a drying *and cooling* procedure. The subcombination has separate utility such as cooling laundry dryer items wherein the combination is separately used for heating sensing only.” *See page 3 of the Office Action* (emphasis in original).

The Appellant disagrees. The Examiner has improperly applied the combination/subcombination restriction. A combination is an organization in which a subcombination or element is a part of the combination, wherein the combination does not require particulars of the subcombination and the subcombination is shown to have utility by itself or in a materially different combination. *See MPEP 806.05(a) and (c)*. In other words, the scope defined by the combination cannot overlap the scope defined by the subcombination and the subcombination must be patentably distinct from the combination. In the present application, the scope defined by independent claim 1, included in Group I, overlaps the scope defined by independent claim 15, included in Group III. More specifically, independent claim 1 recites a laundry dryer, which includes, among other features, “a temperature sensor for sensing an internal temperature of the laundry dryer and outputting a sensed temperature of the internal temperature.” Independent claim 15 recites a laundry dryer, which includes, among other features, “a temperature sensor for sensing an internal temperature of the drum during a drying procedure and a cooling procedure, wherein the sensor outputs a sensed temperature signal indicative of the internal temperature of the drum during the drying procedure and the cooling procedure.” The feature of claim 1 is merely a broader recitation of the feature of claim 15 and thus the scope of the claims overlap. Since the scope defined in Group I overlaps the scope defined in Group III, the alleged combination is not patentably distinct from the alleged subcombination. Therefore, the Restriction Requirement is improper and should be reversed.

B. The Examiner erred in rejecting claims 1-4, 6-9, 11 and 12 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,245,764 to *Sung* (hereinafter “*Sung*”).

As required in Chapter 2131 of the M.P.E.P., in order to anticipate a claim under 35 U.S.C. § 102, “the reference must teach every element of the claim.” The Appellant submits that *Sung* does not teach every element recited in claims 1-4, 6-9, 11 and 12 and therefore cannot anticipate these claims.

More specifically, claim 1 recites a laundry dryer which includes, among other features, “a microcomputer for controlling a plurality of drivers associated with a heater, a motor and exhaust fan...wherein said microcomputer stops the heater and the motor, thereby initiating a cooling procedure, and the exhaust fan driver operates during the cooling procedure, such that the exhaust fan draws air out of a drum in the dryer.” Claim 9 recites a method for controlling a laundry dryer, which includes, among other features, “performing a drying procedure, wherein a motor, a heater and an exhaust fan are driven during the drying procedure; performing a cooling procedure, wherein the motor and heater are stopped during the cooling procedure; driving the exhaust fan...during the cooling procedure.” *Sung* fails to disclose at least these features.

Sung discloses that “a heat exchanging fan 4 ... is driven by the driving force of the motor 1 to intake external air into the interior of the outer case 3 ... [to] carry out a heat exchange between the air and the high temperature moist air in the drum 5.” *See column 4, lines 55-60*. In other words, when the motor is not driven the heat exchanging fan is not driven. Therefore, *Sung* cannot possibly teach each and every feature of independent claims 1 and 9, namely, at least, “said microcomputer stops the heater and the motor, thereby initiating a cooling procedure, and the exhaust fan driver operates during the cooling procedure, such that the exhaust fan draws air out of a drum in the dryer,” and “performing a cooling procedure, wherein the motor and heater are stopped during the cooling procedure; driving the exhaust fan...during the cooling procedure.”

For at least the aforementioned reasons, the Appellant submits that claims 1 and 9 are patentably distinguishable over *Sung*. Likewise, claims 2-4, 6-8, 11 and 12, which variously depend from claims 1 and 9 are also patentable for at least the same reasons. Accordingly, the rejection under 35 U.S.C. § 102 (b) over *Sung* is improper and should be reversed.

C. The Examiner erred in rejecting claim 10 under 35 U.S.C. § 103(a) as being obvious over *Sung*.

As required in Chapter 2143.03 of the M.P.E.P., in order to “establish *prima facie* obviousness of the claimed invention, all the limitations must be taught or suggested by the prior art.” As previously discussed, *Sung* fails to teach or suggest each and every feature recited in claim 9, the independent claim from which claim 10 depends. The Office Action alleges that “it would have been obvious matter of design choice to recite the claimed specific internal temperature value, since the teachings of *Sung* would perform the invention as claimed regardless of the recited claim internal temperature value.” Contrary to the Examiner’s allegation, *Sung* fails to teach the claimed invention for at least the reasons discussed above. Nevertheless, even if, assuming *arguendo*, one of ordinary skill modified *Sung* as suggested, the modified teaching still fails to teach or suggest all of the features of claim 9, namely “performing a drying procedure, wherein a motor, a heater and an exhaust fan are driven during the drying procedure; performing a cooling procedure, wherein the motor and heater are stopped during the cooling procedure; driving the exhaust fan ... during the cooling procedure.” The Appellant further contends that one of ordinary skill in the art would not have been motivated to modify *Sung* to include at least these features. Since *Sung* and the modified teachings of *Sung* as suggested in the Office Action fail to teach or suggest all of the features claimed in claim 9, the independent claim from which claim 10 depends, *Sung* cannot possibly render the claimed invention obvious. Therefore, the Appellant submits that claim 10 is patentably distinguishable over the cited reference and request that the rejection under 35 U.S.C. § 103(a) should be reversed.

D. The Examiner erred in rejecting claims 1-4 and 6-12 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of U.S. Patent 6,983,552 (hereinafter “the ‘552 patent”) in view of claims 1-11 of U.S. Patent No. 6,775,923 (hereinafter “the ‘923 patent”).

The currently pending claims 1-4 and 6-12 are not obvious with respect to the ‘552 patent in view of the ‘923 patent. First, neither the ‘552 patent nor the ‘923 patent claim performing a cooling procedure. Since neither claims 1-15 of the ‘552 patent nor claims 1-11 of

the '923 patent claim a cooling procedure, even if one skilled in the art modified the claims as suggested, the resulting modification would still fail to teach or suggest stopping the motor and heater during the cooling procedure, as required by the claims. Accordingly, claims 1 and 9 are not obvious, and are therefore patentable, over claims 1-15 of the '552 patent in view of claims 1-11 of the '923 patent. Likewise, claims 2-4, 6-8, 10, 11 and 12, which variously depend from claims 1 and 9, are also patentable for the same reasons.

Therefore, Appellant submit that the rejection under the judicially created doctrine of obviousness-type double patenting is improper and should be reversed.

D. Claim 15 is patentable over *Sung*.

To reject claimed invention, the Examiner cited *Sung* as disclosing all the features of the claims. Appellant has shown that claims 1-4 and 6-12 are patentable over *Sung*. The Examiner did not address claim 15 because the Examiner improperly withdrew claim 15 based on constructive restriction requirement. As discussed above, Appellant has argued that the constructive restriction requirement is improper. Moreover, Appellant respectfully submit that claim 15 is patentable over *Sung*.

Specifically, claim 15 recites, among other features, a microcomputer receives the sensed temperature signal indicative of the internal temperature of the drum and actuates a plurality of drivers associated with the heater, the motor and the exhaust fan according to the sensed temperature signal during the drying procedure, following the drying procedure, the cooling procedure begins, wherein the actuation of the exhaust fan continues throughout the entire cooling procedure, the actuation of the heater and the motor is discontinued throughout the entire cooling procedure.

Sung, on the other hand, discloses that "a heat exchanging fan 4 ... is driven by the driving force of the motor 1 to intake external air into the interior of the outer case 3 ... [to] carry out a heat exchange between the air and the high temperature moist air in the drum 5." See column 4, lines 55-60. In other words, when the motor is not driven the heat exchanging fan is not driven. Therefore, *Sung* cannot possibly teach each and every feature of claim 15.

Further, the Appellant further contends that one of ordinary skill in the art would not have been motivated to modify *Sung* to include at least these features. The structure disclosed in *Sung*, for instance, column 4, lines 55-60, does not allow *Sung* to be modified as in claim 15. Therefore, claim 15 is patentable over *Sung*.

VII. CONCLUSION

For reasons as discussed above, claims 1-4 and 6-8, claims 9-12, and claim 15 were improperly restricted under 35 U.S.C. § 121; claims 1-4, 6-9, 11 and 12 were improperly rejected under 35 U.S.C. §102(b) as being anticipated by *Sung*; claim 10 was improperly rejected under 35 U.S.C. §103(a) as being obvious over *Sung*; claims 1-4 and 6-12 were improperly rejected under the judicially created doctrine of obviousness-type double patenting over claims 1-15 of the '552 patent in view of claims 1-11 of the '923 patent. Further, claim 15 is patentable over *Sung*.

The Honorable Board is requested to reverse the rejection set forth in the final Office Action and direct the Examiner to pass this application to issue.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. § 1.136, and any additional fees required under 37 C.F.R. § 1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

Dated: March 20, 2008

Respectfully submitted,

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CLAIMS APPENDIX

Claims Involved in the Appeal of Application Serial No. 10/716,444

1. (Previously Presented) A laundry dryer comprising:
a temperature sensor for sensing an internal temperature of the laundry dryer and outputting a sensed temperature signal indicative of the internal temperature; and
a microcomputer for controlling a plurality of drivers associated with a heater, motor and exhaust fan according to the sensed temperature signal from said temperature sensor, wherein said microcomputer stops the heater and the motor, thereby initiating a cooling procedure, and the exhaust fan driver operates during the cooling procedure, such that the exhaust fan draws air out of a drum in the dryer.
2. (Previously Presented) The laundry dryer as claimed in claim 1, wherein said microcomputer controls the plurality of drivers by comparing the sensed internal temperature with a predetermined temperature value.
3. (Previously Presented) The laundry dryer as claimed in claim 2, wherein the predetermined temperature value corresponds to an internal temperature of 50°C.
4. (Previously Presented) The laundry dryer as claimed in claim 1, wherein the sensed temperature signal indicates the internal temperature of the laundry dryer during the cooling procedure.

5. (Canceled)

6. (Previously Presented) The laundry dryer as claimed in claim 1, wherein said microcomputer drives the exhaust fan during the cooling procedure.

7. (Previously Presented) The laundry dryer as claimed in claim 1, wherein the sensed temperature signal indicates the internal temperature of the laundry dryer after completion of a drying procedure.

8. (Previously Presented) The laundry dryer as claimed in claim 7, wherein the heater, motor, and exhaust fan are driven during the drying procedure.

9. (Previously Presented) A method of controlling a laundry dryer, comprising steps of:

performing a drying procedure, wherein a motor, a heater and an exhaust fan are driven during the drying procedure;

performing a cooling procedure, wherein the motor and heater are stopped during the cooling procedure;

driving the exhaust fan to draw air from a drum in the dryer during the cooling procedure;

sensing an internal temperature of the laundry dryer during said cooling procedure step;

comparing the sensed internal temperature with a predetermined temperature value; and

stopping said cooling procedure step if the sensed temperature is lower than a predetermined temperature.

10. (Previously Presented) The method as claimed in claim 9, wherein the predetermined temperature value corresponds to an internal temperature of 50°C.

11. (Previously Presented) The method as claimed in claim 9, further comprising the drying procedure being completed before initiation of said cooling procedure step.

12. (Previously Presented) The method as claimed in claim 9, further comprising the step of controlling a plurality of drivers associated with the heater, motor, and the exhaust fan according to the sensed internal temperature signal.

13. (Canceled)

14. (Canceled)

15. (Withdrawn) A laundry dryer comprising:
a drum;
a heater for heating air introduced into the drum;
a motor for rotating the drum;
an exhaust fan for drawing air out of the drum;
a temperature sensor for sensing an internal temperature of the drum during a drying procedure and a cooling procedure, wherein the sensor outputs a sensed temperature signal indicative of the internal temperature of the drum during the drying procedure and the cooling procedure;

a microcomputer receives the sensed temperature signal indicative of the internal temperature of the drum and actuates a plurality of drivers associated with the heater, the motor and the exhaust fan according to the sensed temperature signal during the drying procedure, following the drying procedure, the cooling procedure begins, wherein the actuation of the exhaust fan continues throughout the entire cooling procedure, the actuation of the heater and the motor is discontinued throughout the entire cooling procedure.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.